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硕 士 学 位 论 文

Skilled Memory in Interpreting

口译中的熟练记忆

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SYNOPSIS

Memory skills exert fundamental influence on the interpreting performance. Author of this thesis is concerned about methods of improving memory skills. Key skilled memory theories, for example, the Chunk theory and Long-term working memory theory are used as theoretical basis.

The thesis is composed of four chapters excluding an introduction and conclusion.

Chapter 1 starts with functions of memories in information process. Furthermore, in explaining experts' skilled memory, ordinary view of working memory is extended by introducing the Chunk theory and long-term working memory theory. The following chapters try to benefit interpreting activities with these theories.

Chapter 2 tries to prove that interpreting is, in terms of memory requirements, a skilled memory activity. Two fundamental features of interpreting activity, resource competition and enlarged storage, are elaborated to relate the activity to skilled memory. Meanwhile, the Interpretive Theory of Translation and Daniel Gile's Effort Model help the elaboration with detailed interpreting phases and efforts.

Chapter 3 brings skilled memory theories, mainly the Chunk theory and long-term working memory theory, in interpreting activities. The former is used to deal with the feature of resource competition tasks, simultaneous interpreting in particular, and the latter, with the feature of enlarged storage, more urgently required in consecutive interpreting. Relations of the two theories in helping memory performance in both modes of interpreting are stated to ensure a combined effort of both theories made for either mode.

Chapter 4 calls for building skilled memory for interpreting tasks by explaining the possibility of acquiring it. Methods of constructing skilled memory are put forward coupled with general methods of improving memory performance with respect to interpreting training, practice and real-life interpreting tasks.

Key words: interpreting; skilled memory; working memory

摘要

记忆的技巧极大地影响口译的表现。本文关注改进口译记忆技巧的方法。文章的理论基础是组块理论和长时工作记忆理论等熟练记忆理论。

论文除前言和结语以外包括四章。

第一章以记忆在信息处理中的作用为起点。在解释专家记忆的时候，由于引入组块理论和长时工作记忆理论，以往的工作记忆观点得以拓展。此后几章试用这些理论为口译活动服务。

第二章旨在证实根据记忆的要求，口译属于熟练记忆活动。文章阐述了口译的两大特点——资源竞争与存储扩大，并将口译与熟练记忆联系起来。同时，释意理论和 Daniel Gile 的认知负荷模型有助于具体地阐释口译的过程与负荷。

第三章将熟练记忆理论，即组块理论和长时工作记忆理论引入口译活动中来。组块理论用于说明口译活动资源竞争的特点，特别是在同声传译当中；而长时工作记忆理论用于说明口译活动记忆存储扩容的特点，特别是在交替传译当中。文章随后阐述了两个理论在同声和交替传译中辅助记忆的关系，表明两个理论需在两种口译模式中结合使用。

第四章说明了在口译中获取熟练记忆的可能性和必要性，提出了获取熟练记忆的方法。此外还提出了在口译培训、演练和实战方面改善记忆的一般方法。

关键词：口译；熟练记忆；工作记忆

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Introduction

Interpreting, as an internationally recognized profession, began to take shape only around the turn of the twentieth century (Lin Yuru, 1999:1). As a specific domain, which has recently started to bring in theoretical study, interpreting study bears an even shorter history. Earlier interpreting study was mainly involved in practical techniques and skills of improving interpreting performance gained largely through continued real interpreting assignments. Later research such as the Interpretation Theory and a number of Daniel Gile's models and work done by Robin Setton, etc., became more theory-oriental. Thoughts concerning language, behavior and culture etc. brought in a broader view for the study.

The introduction of memory study in language activities is not new. But many laboratory experiments concerning language research stay far too simple from complex cognitive tasks like professional interpreting, especially interpreting between Chinese and English. Rui Min (2002:194-203) discussed the improvement of interpreting memory on the basis of George Miller's Chunk theory and general features of memories. George Miller's Chunk theory is applauded for improving short-term memory performance. By making laboratory memory tests on ordinary people it proposes that around 7 chunks are the number of information units that can stay effectively in people's short-term memory. Effective chunking is put forward to help with the short-term memory, which is of great value to highly intensive online operation of professional interpreting.

Zhang Qifan (2002:269-275) also made remarkable study on the role of mixed codes for reducing brain effors based on Daniel Gile's Effort Model (Daniel Gile,

1995:159-169). The two studies of Chinese and English interpreting shed light on the two dimensions of interpreting memory: resource competition and enlarged storage. Scholars have related the two dimensions largely to short-term memory or more recently, working memory, probably considering the urgency of interpreting tasks in terms of limited time for the work. Some of them add that long-term store should play a role in the online process, yet role of long-term store was confined to storage instead of active participation into online process until, as far as author of this thesis acknowledges, the emergence of the long-term working memory theory set up by Ericsson and his colleagues in 1995 (Ericsson, 1995).

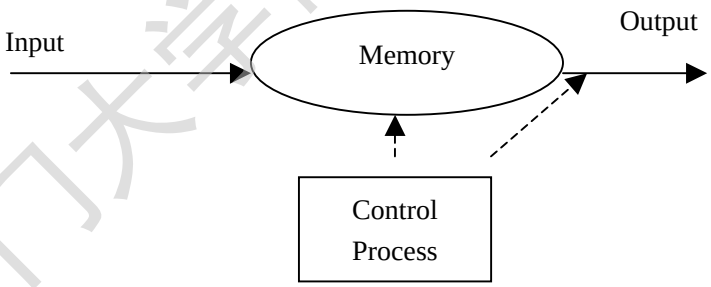
Ericsson's thought distinguishes experts' domain specific activities from the ordinary cognitive activities and puts forwards long-term working memory as an extended part of working memory actively taking part in the online process in skilled activities. His study began with domain specific activities like chess, computer programming and moves on to include text comprehension, which is much closer to interpreting comprehension and sheds light on this thesis.

Inspired by both the Chunk theory and long-term working memory theory, author of this thesis tries to suit them to the two dimensions of interpreting and to abstract related parts of these skilled memory theories to give a fresh view of interpreting and benefit it with methods of improving memory performance. Apart from skilled memory, picture of the memory system functioning in information process is also drawn to facilitate discussions on interpreting tasks. Author of this thesis hopes to present a primary framework of memories in interpreting and specify part of it as skilled memory for the domain of interpreting.

Chapter 1 Memory in information process

1. A general view

From the perspective of information processing, memory is recognized as an information processing system, which draws in, revises, stores and processes environmental information (Klatzky, 1984:16). Different schools have put several memory models forward and they share something in common on memory structure and function of its elements. As displayed below (Simon, 1986:21), environmental information enters memory, a black box, and comes out after being processed in the box. Usually, input and output are not automatic but controlled. Author of this thesis adds one more arrow between Control Process and Memory in that she thinks the black box needs controlling instead of operating on its own.



Graph 1

2. Memories

It is agreed that three types of memories are normally involved in an information process and each of them serves different ends.

2.1 Sensory memory (SM)

Sensory memory briefly maintains sensory information that is generated in sensory organs by direct external stimuli and lasts a short moment longer than the stimuli themselves (Yang Zhiliang, 1999:38). It holds information in a raw, unanalyzed form, and offers extra possibilities for later process. It is assumed that we have one sensory store for each sensory system, since stimuli enter through a variety of sensory channels like visual, acoustic and touching organs. Information in sensory memory makes no sense and disappears immediately unless it is identified, selected and enters short-term memory, by attention.

2.2 Short-term memory (STM) or Working memory (WM)

A transition between sensory memory and long-term memory, short-term memory maintains information for around 1 minute. The term of short-term memory lays much emphasis on storage, while the other widely used term, working memory (WM) which stresses online operations, begins to take the place of STM. Working memory refers to a limited capacity system responsible for the temporary storage and processing of information while cognitive tasks are performed (Collette, 2000: 46). Ruchkin (1999:345) says, “it serves as a “workspace” in which newly presented information and information from long-term memory are (is) temporarily held while being processed for further action.” It refers to information

maintained in readily accessible storage for only a short period of time (Ericsson, 1995:211).

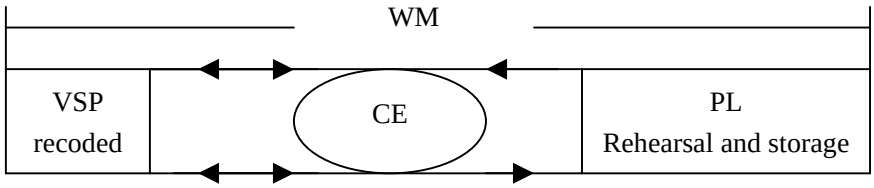
2.2.1 Components of working memory

Working memory is believed to be composed of: a central executive system (CE) and two slave systems of visual-spatial sketch pad (VSP) and phonological loop (PL). VSP maintains visual information, and PL, phonological information. CE serves to allocate attention to these slave systems and to interpret information from the slave systems in the performance of tasks (Numminen, 2000:583). The composition of WM is demonstrated in Graph 2.

PL is the basis of memory span. Items kept in its storage are the net result of vanishing of information and reliving of information by rehearsal, an echo operation, which maintains information in WM by repeating it internally. If rehearsal is interrupted, information transfer might probably fail. There are two types of rehearsal: semantic and mechanical. Information, rehearsed semantically, more easily enters LTM and thus lasts for a long time, while information that is not well chunked has to be rehearsed mechanically and needs more rehearsals before entering long-term memory. However, mechanic rehearsal is never definitely inferior to semantic one because the mechanic benefits recognition while the semantic facilitates recall (Hong Dehou, 1988:56).

Auditory material is considered to have obligatory access to the phonological store, while visual material must be recoded via the phonological loop before it is registered in the phonological store (Hanten, 2001:165). Nonetheless, memory load with the same amount of information on VSP is proved to be less severe than

on PL (Zhang Qingfang, 2000:16). If presented in dual modalities: auditory and visual, information can be well maintained and operated by making use of both modalities.



Graph 2

2.2.2 Information storage in WM: Chunks

Information that enters WM can be operated, but the storage of the memory is believed to be quite small, about 7 units according to George Miller (1956), and the storage limitation is time and again verified by ample experiments. Miller defined a unit of information as chunk, which is formed by an information process (chunking) that integrates smaller pieces of information into larger ones, in order to enlarge WM. Chunk, in essence, is the result of reorganizing or re-encoding of information. When getting into WM, small pieces of information are integrated into larger familiar units with the help of knowledge in long-term memory (LTM). How well a chunk forms largely depends on the knowledge base in the LTM. The more powerful the knowledge base, the more ways of chunking and the larger quantity of information each chunk contains.

2.3 Long-term memory (LTM)

Long-term memory is a repository of our knowledge of the world (Carroll,

1999:49). This includes general knowledge along with personal experiences. LTM maintains all of the information that is retained from the past, namely not currently active. It facilitates the interpretation of new events and in turn, the new events may later be added to this storehouse of information.

Knowledge is commonly categorized into declarative, procedural and strategic knowledge. Declarative knowledge is the knowledge about factual, rule-based information. Procedural knowledge pertains to how to do something within a specific domain, serving as the link between the situation and the action and involves the decision of what movement to execute and its subsequent execution. Strategic knowledge refers to concepts and strategies of a generalized form that can be applied within a variety of domains, including different control processes used to remember information (Stemarie, 1999:271).

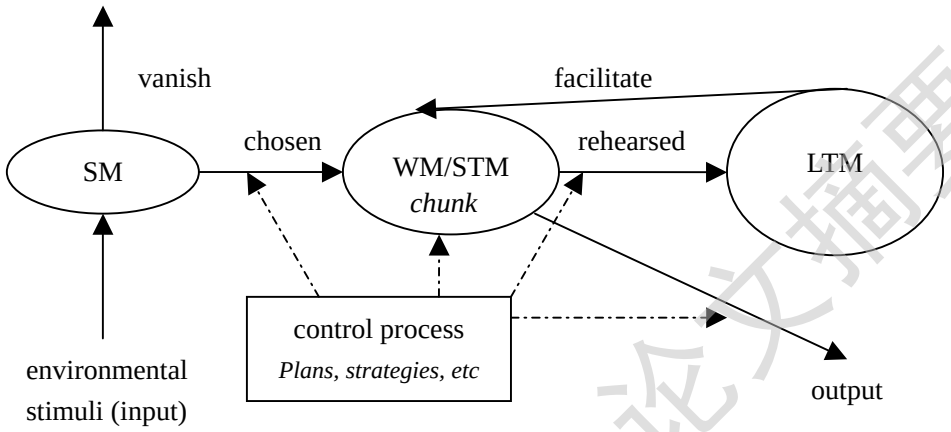
LTM has long been taken as a spacious store, which is away from online operations, and retrieval of information from it does not match the speed of online operations. But recently, memory experts suggested that part of LTM could possibly participate in quick processes so long as this part is familiar enough to its user.

3. Ordinary information process through memories

3.1 An information processing model

Based on Graph 1, a more comprehensive model of information process is in place. As shown in Graph 3, environmental stimuli continuously move into sensory stores, which take a couple of forms like visual and auditory etc. Information,

which falls in the current goals moves into WM by attention. The chosen information is chunked, rehearsed if required for a longer duration before identified with the assistance of knowledge base in LTM and stays in this permanent memory. The whole thing is arranged by a control process, which contains various memory plans and strategies.



Graph 3

3.2 Key features of information process

3.2.1 Processing capacity: trade-off relation of storage and operational resource

Processing capacity refers to a total amount of cognitive resources we may devote to a task, which is assumed to be limited and unchangeable throughout one's life, or at least for quite a long time. When tasks are new or difficult, more processing capacity is required for the operation function, thereby leaving less space available for the storage function. The explanation proposed by Case is that each individual possesses a Total Processing Space (TPS), which is subdivided into an Operating